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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,725	10/12/2001	Casimer M. DeCusatis	FIS920010131US1(14564)	2486

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Steven Fischman, Esq.
Scully, Scott, Murphy & Presser
400 Garden City Plaza
Garden City, NY 11530

EXAMINER	
CURS, NATHAN M	
ART UNIT	**PAPER NUMBER**
2633	

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/976,725	DECUSATIS ET AL.
	Examiner	Art Unit
	Nathan Curs	2633

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 July 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/12/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because Figure 7 numbers the band pass filter as "111", however the band pass filter is referred to in the specification as being number "110" (page 6, line 32). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: on page 6, line 13, the acronym "ADF" is not defined; on page 6, line 15, the acronym "OCLD" is not defined; on page 6, line 18, the acronym "OCM" is not defined; and on page 6, line 19, the acronym "OCI" is

not defined. On page 7, line 30, "multiplexing filter" should be "demultiplexing filter" according to page 7, line 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear if the limitation "the dither signal" refers to the claimed first dither signal or the claimed second dither signal.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-9, 11-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan et al. (US Published Patent Application No. 09/972991) in view of Zhou et al. (US Published Patent Application No. 09/906195).

Regarding claim 1, Wan et al. disclose a method of tracking and compensating for changes in a dense wavelength division multiplexing (DWDM) network, comprising employing a dither feedback mechanism which uses optical filters that are already part of the network (fig. 5

and paragraph 0054); and dithering the optical filter bandpass about the center wavelength of each channel in use to obtain a measurement of the optical transfer function (OTF) in the network at any instant in real-time (paragraph 0002 and fig. 4 and paragraphs 0048-0051 and fig. 5 and paragraphs 0054-0056). Wan et al. disclose that the filters are already part of the network, but do not specifically disclose that the filters are for add/drop functions, however, Wan et al. do disclose that the dither tone detection arrangement can be used at any desired point in the optical WDM network (paragraph 0053). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dither tone detection arrangement in combination with the filters at add/drop nodes in a WDM network, which add/drop nodes are well known in the art, in order to identify and monitor optical channels at the nodes. Wan et al. disclose that the OTF of the WDM channels can be tracked (paragraph 0002), but do not disclose feedback signals used to compensate for the changes produced by adding or dropping wavelengths. Zhou et al. disclose detecting individual channel powers of a WDM signal at add-drop nodes utilizing dither signals of each of the channels, where the power measurements are used to adjust pre-emphasis of the WDM signal at add/drop nodes, where attenuation or gain of the channels is used to balance the WDM signal (paragraphs 0075-0080). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the measured channels powers achieved via the dither detection feedback of Wan et al. for pre-emphasis of the WDM signal at add-drop nodes, in order to balance the channel powers of the WDM signal at add/drop nodes.

Regarding claim 2, Wan et al. in view of Zhou et al. disclose a method according to claim 1, wherein the feedback mechanism is based on a wavelength locked loop and allows a spectral decomposition (optical power vs. wavelength) with very fast response corrections and hence enables the use of networks with more wavelengths spaced more closely together at a specified

bit-error rate (BER) (Wan et al.: paragraph 0009, paragraphs 0023-0026 and fig. 5 and paragraphs 0054-0056).

Regarding claim 3, Wan et al. disclose a method of monitoring optical signals transmitted through an optical network, comprising: transmitting a set of optical signals through a network, each of the optical signals having a respective wavelength (fig. 4 and paragraphs 0047-0052); tracking changes to said set of signals by passing each of the signals through a filter having a bandpass function, and dithering the filter bandpass about the wavelengths of each of said set of signals to generate filter output signals (fig. 5 and paragraphs 0054-0056). Wan et al. do not disclose using the filter output signals to adjust the network or the set of optical signals to compensate for changes in optical signals transmitted in the network; however, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the dither-signal-based WDM transmission adjustment teaching of Zhou et al. with Wan et al., as described above in claim 1.

Regarding claim 4, Wan et al. in view of Zhou et al. disclose a method according to claim 3, for use with an optical control monitor having a filter for ongoing optical signals from the network, and wherein the passing step includes the step of passing at least some of the optical signals through the filter of the optical control monitor (fig. 5 and 0054). Wan et al. disclose that the filter is already part of the network, and that it is a band-pass filter for a WDM wavelength, but do not specifically disclose that the filters are for add/drop functions, however, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the dither tone detection arrangement of Wan et al. at add/drop nodes, as described above in claim 1.

Regarding claim 5, Wan et al. in view of Zhou et al. disclose a method according to claim 3, further comprising the step of dropping optical signals from the network (Wan et al.: paragraph 0053 and Zhou et al.: paragraph 0075), and wherein the step of using the filter output

signals includes the step of adjusting the set of optical signals or the network to compensate for the dropping of optical signals from the network, as described above in claim 1 regarding pre-emphasis and balancing the WDM signal.

Regarding claim 6, Wan et al. in view of Zhou et al. disclose a method according to claim 3, further comprising the step of adding optical signals to the network (Wan et al.: paragraph 0053 and Zhou et al.: paragraph 0075), and wherein the step of using the filter output signals includes the step of adjusting the set of optical signals or the network to compensate for the adding of optical signals to the network, as described above for Wan et al. in view of Zhou et al. in claim 1 regarding pre-emphasis and balancing the WDM signal.

Regarding claim 7, Wan et al. in view of Zhou et al. disclose a method according to claim 3, wherein each of the filter output signals represents the difference between a passband wavelength of the filter and the wavelength of a respective one of the signals passed through the filter (Wan et al.: fig. 5, element 70 and paragraph 0054).

Regarding claim 8, Wan et al. in view of Zhou et al. disclose a method according to claim 3, wherein the using step includes the steps of: using the filter output signals to generate a power density signal representing the spectral power density of said set of optical signals (Wan et al.: paragraph 0002); and using the power density signal to adjust said spectral power density in response to changes in said power density, as described above for Wan et al. in view of Zhou et al. in claim 1 regarding pre-emphasis and balancing the WDM signal.

Regarding claim 9, Wan et al. in view of Zhou et al. disclose a method according to claim 3, wherein the using step includes the steps of: processing said filter output signals to generate a further signal representing changes in the optical spectrum of said set of optical signals (paragraphs 0002 and 0055); and using said further signal to adjust the optical network or the set of optical signals to compensate for said changes in the optical spectrum, as described

above for Wan et al. in view of Zhou et al. in claim 1 regarding pre-emphasis and balancing the WDM signal.

Regarding claim 11, Wan et al. disclose an optical control monitor comprising: a receiver for receiving a set of optical signals, each of the optical signals having a respective wavelength; and a tracking circuit to track changes to said set of signals, including i) a filter having a bandpass function, ii) means to pass said set of optical signals through the filter, wherein the wavelengths of the optical signals are dithered relative to the filter bandpass to generate filter output signals (fig. 5 and paragraphs 0054-0056). Wan et al. do not disclose control for using the filter output signals to make a defined adjustment to compensate for said changes; however, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the dither-signal-based WDM transmission compensation control teaching of Zhou et al. with Wan et al., as described above in claim 1.

Regarding claim 12, Wan et al. in view of Zhou et al. disclose an optical control monitor according to claim 11, for use with an optical network (Wan et al.: fig. 5 and paragraphs 0054-0056). Wan et al. do not disclose that the filter is adapted to add or drop optical signals from the network, however, Wan et al. do disclose that the filter is a band-pass filter for a WDM wavelength. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dither tone detection arrangement of Wan et al. at add/drop nodes, as described above in claim 1.

Regarding claim 13, Wan et al. in view of Zhou et al. disclose an optical control monitor according to claim 12, wherein the control makes said adjustment to compensate for the dropping of optical signals from the network (Zhou et al.: paragraphs 0075-0080), where it would have been obvious to one of ordinary skill in the art at the time of the invention to

combine the dither-signal-based WDM transmission compensation control teaching of Zhou et al. with Wan et al., as described above in claim 1.

Regarding claim 14, Wan et al. in view of Zhou et al. disclose an optical control monitor according to claim 12, wherein the control makes said adjustment to compensate for the adding of optical signals to the network (Zhou et al.: paragraphs 0075-0080), where it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the dither-signal-based WDM transmission compensation control teaching of Zhou et al. with Wan et al., as described above in claim 1.

Regarding claim 15, Wan et al. in view of Zhou et al. disclose an optical control monitor according to claim 11, wherein each of the filter output signals represents the difference between a passband wavelength of the filter and the wavelength of a respective one of the signals passed through the filter (Wan et al.: fig. 5, element 70 and paragraph 0054).

Regarding claim 16, Wan et al. in view of Zhou et al. disclose an optical control monitor according to claim 11, wherein the control includes: means to use the filter output signals to generate a power density signal representing the spectral power density of said set of optical signals (Wan et al.: paragraph 0002); and means to use the power density signal to make the defined adjustment in response to changes in said power density (Zhou et al.: paragraphs 0075-0080), where it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the dither-signal-based WDM transmission compensation control teaching of Zhou et al. with Wan et al., as described above in claim 1.

Regarding claim 18, Wan et al. disclose an arrangement for an optical network, the arrangement comprising: an transmit unit comprising means for transmitting a set of optical signal, each of the optical signals having a respective wavelength (fig. 4 and paragraphs 0047-0052); and a first dither source for dithering at least one of the optical signals (fig. 4, element

46); and a received unit comprising a receiver for receiving the set of optical signals and a tracking circuit to track changes to said set of signals, the tracking circuit including a filter having a bandpass function, means to pass said set of optical signals through the filter, wherein the wavelengths of the optical signals are dithered relative to the filter bandpass, and to generate filter output signals (fig. 5 and paragraphs 0054-0056). Wan et al. do not disclose an add/drop unit; however Wan et al. do disclose that the dither tone detection arrangement can be used at any desired point in the optical WDM network (paragraph 0053). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the dither tone detection arrangement for an add/drop node, as described above in claim 1. Wan et al. do not disclose making defined adjustments to compensate for changes in the transmitted wavelengths; however, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the dither-signal-based WDM transmission compensation control teaching of Zhou et al. with Wan et al., as described above in claim 1.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 3, 7, 9, 10, 11, 15 and 17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 5 and 7

of copending Application No. 09/963258. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are claiming the same invention for optical monitoring and spectral adjustment of a wavelength based on filtering the detected signal and mixing a dither signal with the received signal in processing the spectral power density of the signal for use in adjusting the signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

9. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached M-F (from 9 AM to 5 PM). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

M. R. SEDIGHIAN
PRIMARY EXAMINER